

Shaping the Future of EMS in California

EMS ACCESS

VISION SUBCOMMITTEE #6

Goals:

- A. To identify generalized and universally applicable principles for maintaining as foundational the public access to emergency medical services.
- B. To maintain the integrity of 911 systems under conditions of tremendous change taking place in healthcare.

Needs Statement:

- A. Historically, the administration of EMS in California has been a shared function among the State EMS Authority, counties through their local EMS agencies, and in some settings through cities and special districts. EMS has been administrated on a jurisdictional basis. Healthcare fee-for-service reimbursement has been a significant revenue source for the provision of EMS services in the State.
- B. Over the last several years the following trends have been observed in healthcare:
 - 1. Vertical and horizontal integrations of hospitals and other facilities into regional and statewide health systems.
 - 2. Integration of physicians into single and multi-specialty management groups.
 - 3. Vertical integration of physicians and other health professionals with health systems.
 - 4. The spread of managed care throughout the state has changed the providers of healthcare services from revenue centers to cost centers.
 - 5. Integrated health systems, or networks, are financially incentivized to deliver all healthcare services within their networks and with providers and venues of their choice.
 - 6. Healthcare networks are creating geographical structures that are vastly greater than the historical EMS jurisdictional structures.
- C. There is a need to coordinate the administration of EMS with the trends occurring in healthcare while maintaining the public's access to emergency medical services.

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Background:

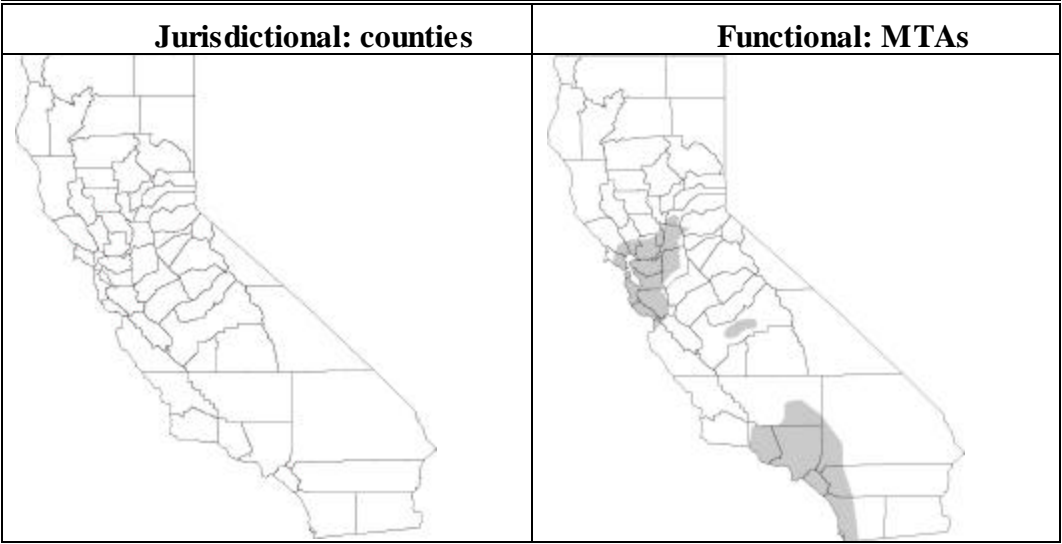
- A. Access is the perception of a healthcare need. Demand is the perception of healthcare resource need. Access to healthcare services is a broad topic and can be broken down in the following fashion:
 - 1. Scheduled: elective admissions, clinic visits, home health visits, interfacility transfers, etc
 - 2. Unscheduled
 - a. walk-in (transport by self, family, friend, etc)
 - b. primary service/transport
 - i. services/transport by 911 services
 - ii. services/transport by non-911 services, eg 311, 800/888-####, or ###-#### (7-digit)
 - c. secondary service/transport
 - i. interfacility transfers
- B. A universal access system may be in the broadest sense a system that handles both scheduled and unscheduled allocation of healthcare resources. However, for discussions in this paper a “universal access system” will be limited to unscheduled services and transports occurring in a primary or secondary fashion.
- C. The transition from healthcare resource providers being viewed as revenue centers to cost centers has brought scrutiny to the over-utilization of 911 services and the carving-out of payer revenue sources.
- D. Over-utilization usually refers to using an EMS system or 911 for non-emergent health conditions. It follows that resources consumed in non-emergent health services takes away from the EMS system’s ability to respond for emergent health services. Adding more resources to handle this perceived increased demand drives the cost of the entire system up.
- E. A carve-out is a removal of consumers (members of a particular health plan) from the 911 system either by diversion to alternate numbers prior to the dialing of 911 or shunting to other providers after dialing 911. The providers participating in the carve-out are financially incentivize to have the consumers use resources of their choice. The 911 system minus the carve-outs now has less funded utilizations which may pressure cost-shifting.
- F. Both over-utilizations and carve-outs may have further impact upon 911 systems by creating unfavorable economies of scale.
- G. For those systems where over-utilizations are considered a problem and carve-outs are occurring or anticipated alternate phone numbers to 911 may be considered must have the following features:

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1. integration with 911, to maintain the safety net
 2. decision methodologies equivalent in ability to discriminate emergent conditions as existing 911 services
 3. decisions are based upon equivalent medical appropriateness practices
- H. The trends that are occurring in healthcare are creating structures that are vastly greater than the historical EMS jurisdictional units in California. These healthcare structures can be further described in terms of two dimensions:
- I. Resources dimension: the geographical area that is created by the vertical and horizontal integration of healthcare providers through the sharing of financial risk. An integrated delivery network, IDN, is created and may exist at the local, regional, and statewide level.
- J. Consumer/customer dimension: the geographical area that is created by consumers and consumer groups (members) or the customers (employers, local government, etc.) of a particular health plan. A medical trade area, MTA, is created and may exist at the local, regional, and statewide level.
- K. There are two more structural elements that need to be defined:
1. the jurisdictional EMS unit, JEMSU, is the geographical area that is administrated by the LEMSA, county, city, or special district for the provision of emergency medical services.
 2. the universal access system, UAS, is the geographical area that the universal access is offered in.
- L. IDNs, MTAs, JEMSUs, and UASs *may* form various combinations of overlapping areas and of disparate sizes.

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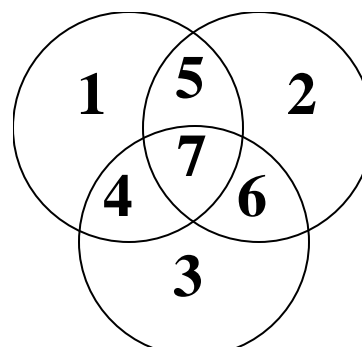
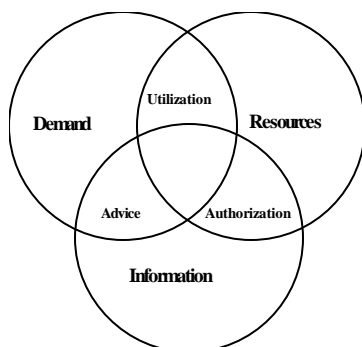
M. Geographical Domains



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N. Functional Aspects

Venn Diagrams of Access



Zone 1	<ul style="list-style-type: none"> is that aspect of the (access) system that characterizes the process or methodologies that translate an access (perception of healthcare need) into a demand (perception of resource need) e.g.: PSAP, interrogation step of a CAD, algorithms, expert systems, etc.
Zone 2	<ul style="list-style-type: none"> is the aggregate resources of the system, characterized in terms of capability and capacity e.g.: U/UH the system runs at, peak staffing, hospital services
Zone 3	<ul style="list-style-type: none"> embodies all the information or data that may be available to a system e.g.: insurance status, physician and hospital choices, DNR status, healthcare informational products, decision tools, etc.
Zone 4	<ul style="list-style-type: none"> advice is the overlap of demand (perception of resource need) and information available to the system e.g.: telephone triage, advice centers, scheduling office visits, PAI, etc
Zone 5	<ul style="list-style-type: none"> utilization is the actual expenditure of system resources for demand e.g.: ALS ambulance, CCT, wheelchair van, back to-bed visit, "treat-and-release," immunizations, etc.
Zone 6	<ul style="list-style-type: none"> authorization is the information/resource transaction e.g.: Emergency Department "gatekeeping," in-plan specialty referrals, etc.
Zone 7	<ul style="list-style-type: none"> is the only zone where demand, resources, and information are all equally co-existent. This may be viewed as an ideal system e.g.: enhanced 911 system that has data linkage to all payer sources and all provider sources

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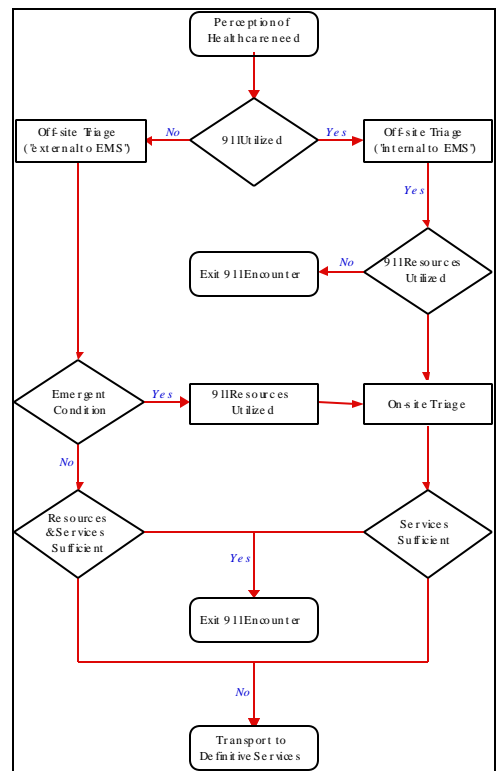
O. Transactional Aspects

1. Financial
2. Data
3. Communications
4. Transportation

P. Utilization v Revenue

	Utilization	
Revenue	Under—	Over—
Insufficient	<ul style="list-style-type: none"> undesirable conditions change needed 	<ul style="list-style-type: none"> undesirable conditions change needed
Sufficient	<ul style="list-style-type: none"> desirable conditions no change needed 	<ul style="list-style-type: none"> desirable conditions no change needed

Q. Simple Universal Access Algorithm



Task Statements:

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- A. Emergency medical dispatch principles should be adopted as core features of emergency medical service systems in California.
- B. The following information should be addressed for a universal access system:
 - 1. What is the geographical domain for the UAS?
 - 2. What JEMSUs are involved?
 - 3. What MTAs are encompassed?
 - 4. What IDNs are involved?
 - a. Capabilities
 - b. Capacities
 - c. Repatriation
 - d. Reciprocity
 - 5. What non-IDN providers need to be accounted?
 - a. public service/transport providers
 - b. private service/transport providers
 - 6. What is the communication infrastructure for the UAS?
 - a. PSAPS
 - b. non-911
 - c. Advice services
 - i. EMD services
 - 7. What are the non-IDN revenue sources available?
 - 8. What are the information services/technologies involved?
 - a. membership verification
 - b. other information transaction, eg clinical data (Kaiser' s EPRP)
- C. The following participants should be involved for a universal access system:
 - 1. Consumers
 - 2. Customers

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3. Providers
4. Administrators

Recommendations:

- A. Emergency medical services should be delivered by universal access systems, such as a 911 system.
- B. Integration of alternate (non-911) access and interfacility transports should be developed in all universal access systems.
- C. Medical appropriateness must have primacy in all universal access systems.
- D. Education of both users and providers of universal access systems must have a central role.
- E. Emergency medical dispatch principles should be a core element of all universal access systems.

Definitions:

911:	a common call number for all emergency services.
Access:	the perception of healthcare need.
Afferent:	carrying inward, input.
Algorithm:	a prescribed finite set of well defined rules or processes for the solution of a problem in a finite number of steps.
ALI:	automatic location information, a feature of E-911 (enhanced 911).
ANI:	automatic number identification, a feature of 911
CAD:	computer-aided dispatch
Capability:	is a statement about services, personnel, and venues.
Capacity:	is a statement about capability and current availability.
Capitation:	a set amount of money received or paid out; it is based on membership rather than on services delivered.
Carve-out:	refers to a set of medical services, plan benefits, or capitation rates that are carved out of the basic arrangement.
Charge:	the difference between what is billed to the customer or consumer and the cost.
Consumer:	ultimate user of a product or service.
Cost:	a measure of what must be given up in order to obtain something whether by way of purchase, exchange or production.
Cost center:	a center that consumes revenue, e.g. consumption of a fixed monthly member payment for an ambulance transport.
Cost shifting:	when a provider cannot cover the cost of providing services under the reimbursement received, the provider raises the prices (charges) to other payers to cover that portion of the cost.
Customer:	buyer of a product or service.

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Demand:	the perception of healthcare resource need
Economies of scale:	reductions in the average cost of a product in the long run, resulting from an expanded level of output.
Economics:	the study of the way in which mankind organises itself to tackle the basic problem of scarcity. All societies have more wants than resources (the factors of production), so that a system must be devised to allocate these resources between competing ends.
Efferent:	carrying outward, output.
EMD:	emergency medical dispatch; interrogation and instruction of the caller(s), prioritization and configuration of the response.
Expert System:	a very sophisticated computer program consisting of 3 parts: <ul style="list-style-type: none">• a stock or rules or general statements• a set of particular facts• a “logical engine” which can apply facts to rules to reach all the conclusions that can be drawn from them
Fixed cost:	cost that remains constant regardless of sales volume. In EMS this is the cost of just producing units with no utilizations
Gate-keeping:	an informal, although widely used, term that refers to a primary care case management model health plan. In this model, all care from providers other than the primary care physician, except for true emergencies, must be authorized by the primary care physician before rendered.
Global capitation:	“global cap,” a capitation payment that covers all medical expenses, including professional and institutional expenses.
IDN:	integrated delivery network, a risk marketplace that is defined by providers in a given area functioning under a capitated agreement.
Indemnification:	fee-for-service
Interfacility transport:	the transport between healthcare facilities not involving a 911 call, may be scheduled or unscheduled
LEMSA:	local EMS agency, an administrative unit of EMS in California, geographically and jurisdictional defined as a county or aggregate of counties.
Marginal cost:	increase or decrease in costs as the result of one more or one less unit of output; also called incremental or differential cost.
MTA:	medical trade area, a geographical marketplace that is defined by a combination of providers and customers.
Non-911:	other call numbers for accessing healthcare services, e.g. 311, seven-digit numbers.
PAI:	pre-arrival instructions.
Payer:	intermediary between the customer and the provider
Primary transport:	a transport that results from a call for emergency medical services
Provider:	generically used for the provider of any product or service
PSAP:	public safety answering position or point. PSAPS are customarily segmented as “primary,” “secondary” and so on. The primary PSAP is the first contact a 911 caller will get. Secondary PSAPs (for EMS) are the dispatch centers for EMS units.

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PSN:	provider sponsored network, also a risk marketplace that is defined by providers in a given area functioning under a capitated agreement.
PSO:	provider service organization, also see IDN, a risk marketplace that is defined by providers in a given area functioning under a capitated agreement.
Queue:	a stream of tasks waiting to be executed
Reciprocity:	reciprocal cooperation between two health plans to minimize the need for repatriation.
Repatriation:	the transfer of a health plan's member from an "out-of-plan" facility to an "in-plan" facility
Resource:	product or service
Revenue:	anticipated or actualized earnings (gross).
Revenue center:	a revenue generating center, e.g. fee-for-service EMS
Risk:	financial and legal risk for providing healthcare products and services.
Scheduled:	anticipated utilization, continuous, continuous queue
Secondary transport:	a transport that results subsequent to an originating call for emergency medical services
Unscheduled:	unanticipated utilization, episodic, discontinuous queue.
Utilization:	consumption of a product or service
U/UH:	unit-hour utilization ratio, a simple method for expressing utilizations per unit time. Examples: emergency physicians in the U.S. see on average 2.35 patients per hour, $U/UH = 2.35$; high performance EMS system may have a U/UH for transport of 0.5, i.e. one transport every 2 hours.

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